



SEQUENCE LISTING

RECEIVED #8
MAY 03 2001
TECH CENTER 1600/2900

<110> Cahoon, Rebecca E.
Klein, Theodore M.
Odell, Joan T.
Orozco, Emil M. Jr.

<120> PLANT CELL CYCLIN GENES

<130> BB1149 US NA

<150> 60/078,735

<151> 1998 March 20

<150> PCT/US99/06047

<151> 1999 March 19

<160> 32

<170> MICROSOFT OFFICE 97

<210> 1

<211> 1071

<212> DNA

<213> Zea mays

<400> 1

ccggaattcc cggggtcgac ccacgcgtcc ggccgcgcgc cgtggcgccc gccgacctcc 60
agctctccgg gtcctacgcc tccgacatct acacctacct ccgctccctg gaggtggatc 120
cgcagcggcg gtcagatccc gattacatcg aggcggtgca ggaggacgtc acggcccaca 180
tgccgagcat cctcgtcgac tggctcgtcg aggtcgcgga ggagtacaag ctgctcgccg 240
acacgctcta cctcaccatc tcttatgtcg accgcttccct ctccgtcaac gcgctcggcc 300
gtgacaagct gcagctccct ggcgttgccct ccattgctcat tgccgcgaag ttcgaggaga 360
tcagcccggc gcacccggag gacttcctgct acatcacaga caacacctac accaaagagg 420
agctcctcaa gatggagagc gacatactca agcttctcaa gttcgagttg ggcaatccta 480
caatcaagac cttcctgaga cgtttcataa gatctgcca tgaagacaag aagggtcca 540
tcttggttaat ggaattcttg gggagctacc ttgctgagct gactctacta gattatggct 600
gcctccggtt cttgccatca gtagttgctg cttcagtcct gtttggttgc aggcctgaca 660
ttgatccaaa taccaatccg tggaacacaa agctgcagaa gatgactggc tacaaagttt 720
ctgaactcaa ggattgcac gtagccatac atgacttgca gctcaacagg aaatgtccat 780
cattaacggc aattcgagac aagtacaagc agcacaagtt caaatgcgtg tcattgatcc 840
tcgtgcctgt cgtgatccct acttcatact ttgaagactt agctgagtag ctgctctcgg 900
actgtaccgc tgtaaggcta acaatctgag ctctccttga gctcttaggg acaagcagaa 960
aataaccgtt tgatgagctt tcctctcatt taagtagcgt ggtgaaagct atttgtttga 1020
ggttcttttag gattaataaaa aaaaaataaaa aaaaaataaaa aaaaaataaaa a 1071

<210> 2

<211> 295

<212> PRT

<213> Zea mays

<400> 2

Gly Ile Pro Gly Val Asp Pro Arg Val Arg Pro Arg Ala Val Ala Pro
1 5 10 15
Ala Asp Leu Gln Leu Ser Gly Ser Tyr Ala Ser Asp Ile Tyr Thr Tyr
20 25 30
Leu Arg Ser Leu Glu Val Asp Pro Gln Arg Arg Ser Arg Ser Asp Tyr
35 40 45
Ile Glu Ala Val Gln Ala Asp Val Thr Ala His Met Arg Ser Ile Leu
50 55 60
Val Asp Trp Leu Val Glu Val Ala Glu Glu Tyr Lys Leu Val Ala Asp
65 70 75 80

Thr	Leu	Tyr	Leu	Thr	Ile	Ser	Tyr	Val	Asp	Arg	Phe	Leu	Ser	Val	Asn	
				85					90					95		
Ala	Leu	Gly	Arg	Asp	Lys	Leu	Gln	Leu	Leu	Gly	Val	Ala	Ser	Met	Leu	
			100					105					110			
Ile	Ala	Ala	Lys	Phe	Glu	Glu	Ile	Ser	Pro	Pro	His	Pro	Glu	Asp	Phe	
		115					120					125				
Cys	Tyr	Ile	Thr	Asp	Asn	Thr	Tyr	Thr	Lys	Glu	Glu	Leu	Leu	Lys	Met	
	130					135					140					
Glu	Ser	Asp	Ile	Leu	Lys	Leu	Leu	Lys	Phe	Glu	Leu	Gly	Asn	Pro	Thr	
145					150					155					160	
Ile	Lys	Thr	Phe	Leu	Arg	Arg	Phe	Ile	Arg	Ser	Ala	His	Glu	Asp	Lys	
				165				170						175		
Lys	Gly	Ser	Ile	Leu	Leu	Met	Glu	Phe	Leu	Gly	Ser	Tyr	Leu	Ala	Glu	
			180					185					190			
Leu	Ser	Leu	Leu	Asp	Tyr	Gly	Cys	Leu	Arg	Phe	Leu	Pro	Ser	Val	Val	
		195					200					205				
Ala	Ala	Ser	Val	Met	Phe	Val	Ala	Arg	Pro	Asp	Ile	Asp	Pro	Asn	Thr	
	210					215					220					
Asn	Pro	Trp	Asn	Thr	Lys	Leu	Gln	Lys	Met	Thr	Gly	Tyr	Lys	Val	Ser	
225					230					235					240	
Glu	Leu	Lys	Asp	Cys	Ile	Val	Ala	Ile	His	Asp	Leu	Gln	Leu	Asn	Arg	
				245					250					255		
Lys	Cys	Pro	Ser	Leu	Thr	Ala	Ile	Arg	Asp	Lys	Tyr	Lys	Gln	His	Lys	
			260					265					270			
Phe	Lys	Cys	Val	Ser	Leu	Ile	Leu	Val	Pro	Val	Val	Ile	Pro	Thr	Ser	
		275					280					285				
Tyr	Phe	Glu	Asp	Leu	Ala	Glu										
	290					295										

<210> 3
 <211> 435
 <212> DNA
 <213> Glycine max

<220>
 <221> unsure
 <222> (1)

<220>
 <221> unsure
 <222> (86)

<220>
 <221> unsure
 <222> (88)

<220>
 <221> unsure
 <222> (216)..(217)

<220>
<221> unsure
<222> (231)

<220>
<221> unsure
<222> (240)

<220>
<221> unsure
<222> (307)

<220>
<221> unsure
<222> (372)

<220>
<221> unsure
<222> (377)

<220>
<221> unsure
<222> (427)

<400> 3
nactccatct tcttccatcc atttcctctt tctcgatctg ttccaaattc acttcacaca 60
caggaaagaa gatggagact cgcgcnngcg caaagagaaa ggcaaatgcc gccaccatag 120
tctttgtcga aaaacaatac cccaacaaga ggcagcgggt tgtgttgggt gaacttccca 180
atttacaaaa ccttattgtc tccgaaactc aaaatnngcg caaagagaag ntcctatgtn 240
ggaagaatcc caatgagaag aaaccatcac ccacaaacaa caacaccttt ccttcccctc 300
agatcancga atcttatgat tcggatatcc acgggtatct tcgtgaaatg gagatgcaga 360
ataagagaag ancaatngtt gatacattga aaaggttaga aaatcgttac ccaaccatgg 420
agcaatntgg tgatt 435

<210> 4
<211> 110
<212> PRT
<213> Glycine max

<220>
<221> UNSURE
<222> (6)

<220>
<221> UNSURE
<222> (49)

<220>
<221> UNSURE
<222> (54)

<220>
<221> UNSURE
<222> (57)

<220>
<221> UNSURE
<222> (79)

<220>
<221> UNSURE
<222> (101)..(102)

<400> 4
Met Glu Thr Arg Ala Xaa Ala Lys Arg Lys Ala Asn Ala Ala Thr Ile
1 5 10 15

Val	Phe	Val	Glu	Lys	Gln	Tyr	Pro	Asn	Lys	Arg	Gln	Arg	Val	Val	Leu
			20					25					30		
Gly	Glu	Leu	Pro	Asn	Leu	Gln	Asn	Leu	Ile	Val	Ser	Glu	Thr	Gln	Asn
		35					40					45			
Xaa	Arg	Lys	Glu	Lys	Xaa	Leu	Cys	Xaa	Lys	Asn	Pro	Asn	Glu	Lys	Lys
	50					55					60				
Pro	Ser	Pro	Thr	Asn	Asn	Asn	Thr	Phe	Pro	Ser	Pro	Gln	Ile	Xaa	Glu
	65				70					75					80
Ser	Tyr	Asp	Ser	Asp	Ile	His	Gly	Tyr	Leu	Arg	Glu	Met	Glu	Met	Gln
				85					90					95	
Asn	Lys	Arg	Arg	Xaa	Xaa	Val	Asp	Thr	Leu	Lys	Arg	Leu	Glu		
			100					105					110		

<210> 5
 <211> 847
 <212> DNA
 <213> Triticum aestivum

<220>
 <221> unsure
 <222> (584)

<220>
 <221> unsure
 <222> (686)

<220>
 <221> unsure
 <222> (704)

<220>
 <221> unsure
 <222> (731)

<220>
 <221> unsure
 <222> (748)

<220>
 <221> unsure
 <222> (768)

<220>
 <221> unsure
 <222> (772)

<220>
 <221> unsure
 <222> (781)

<220>
 <221> unsure
 <222> (785)

<220>
 <221> unsure
 <222> (803)

<220>
 <221> unsure
 <222> (806)..(807)

<220>
 <221> unsure
 <222> (819)

<220>
 <221> unsure
 <222> (825)

<220>
 <221> unsure
 <222> (830)

<220>
 <221> unsure
 <222> (839)

<400> 5
 cggaacaggg agagtgggtgt tcatgagcca ttcttttcagg gaagaaacac aagagataaa 60
 tctgaaactg ctgactcaaa cactgggtac tatgttggct taaacgttat agacattgac 120
 aaagataatg gcaatccaca aatgtgtgct tcctatgctg cagagatata cagaaaccta 180
 atggctgcag agcttataag gagacctaaa tcaaattaca tggagacttt gcaaagggat 240
 atcacaaagg gcatgcgagg aatcctgatt gattgggctt tgaggttcct ggaggaatat 300
 aaacttttgc cagacacact atacctcact gtatatctta ttgatcaatt tctttctcgg 360
 aaatatattg aaagacagaa actacaactt cttggaataa ctagcatgct gattgcctca 420
 aaatatgaag agatctgtgc gcctcgtgtt gaagaatttt gtttcataac tgataacaca 480
 tatacaaaaa atcaggtgct gaaaatggag tgtgaagtgc ttaatgatct ggggtttcat 540
 ctttcagttc ccacaatcaa aacgtttctg aggagattcc ttanagcagc acatgcttct 600
 caaaaaagcc cttgggcaac tttgggctat ctggggcaat tatcttgccg gagttgacat 660
 tgaccgatta cagttccctg aaattnaacc tcaatgggtg gaanctcggc gggtccttgc 720
 aaaatggcac ncgacatcag actgcaangg aatccacctc gagcatanac tnaatcaaaa 780
 nttangtate aagatgcgta cgnatnnatg gaactgacna ggaanacaan ggatccccna 840
 aggtata 847

<210> 6
 <211> 211
 <212> PRT
 <213> Triticum aestivum

<220>
 <221> UNSURE
 <222> (195)

<400> 6
 Arg Asn Arg Glu Ser Gly Val His Glu Pro Phe Phe Gln Gly Arg Asn
 1 5 10 15
 Thr Arg Asp Lys Ser Glu Thr Ala Asp Ser Asn Thr Gly Tyr Tyr Val
 20 25 30
 Gly Leu Asn Val Ile Asp Ile Asp Lys Asp Asn Gly Asn Pro Gln Met
 35 40 45
 Cys Ala Ser Tyr Ala Ala Glu Ile Tyr Arg Asn Leu Met Ala Ala Glu
 50 55 60
 Leu Ile Arg Arg Pro Lys Ser Asn Tyr Met Glu Thr Leu Gln Arg Asp
 65 70 75 80
 Ile Thr Lys Gly Met Arg Gly Ile Leu Ile Asp Trp Ala Leu Arg Phe
 85 90 95

Leu Glu Glu Tyr Lys Leu Leu Pro Asp Thr Leu Tyr Leu Thr Val Tyr
 100 105 110
 Leu Ile Asp Gln Phe Leu Ser Arg Lys Tyr Ile Glu Arg Gln Lys Leu
 115 120 125
 Gln Leu Leu Gly Ile Thr Ser Met Leu Ile Ala Ser Lys Tyr Glu Glu
 130 135 140
 Ile Cys Ala Pro Arg Val Glu Glu Phe Cys Phe Ile Thr Asp Asn Thr
 145 150 155 160
 Tyr Thr Lys Asn Gln Val Leu Lys Met Glu Cys Glu Val Leu Asn Asp
 165 170 175
 Leu Gly Phe His Leu Ser Val Pro Thr Ile Lys Thr Phe Leu Arg Arg
 180 185 190
 Phe Leu Xaa Ala Ala His Ala Ser Gln Lys Ser Pro Trp Ala Thr Leu
 195 200 205
 Gly Tyr Leu
 210

<210> 7
 <211> 1007
 <212> DNA
 <213> Zea mays

<220>
 <221> unsure
 <222> (924)

<220>
 <221> unsure
 <222> (958)

<220>
 <221> unsure
 <222> (971)..(972)

<220>
 <221> unsure
 <222> (996)

<400> 7
 gggagggaat tccttcctcc ttttctgttc ggcgccgtgc tcgcgcgcac ccaccgcac 60
 gccccagtag cccacagctg cacagtgcac gccgactttc ctccgccttg ctgctgcaag 120
 tccgcaacca ctggaggaaa aatcttttcc ttacttttcc ttccctttcc ccccgcgcat 180
 gcacgggctc tgattgacgc catgggggac gccgcggcct ccacgtccgc tcccaccacg 240
 cccacctcca tcctcatctg cctggaagac ggcagcgacc ttctcgccga tgccgacgat 300
 ggcgccggca ctgacctcgt tgcgcgccgc gacgaacgtc tgcttgctgt ggaccaggac 360
 gaggagtatg tagcgctgct cctgtccaag gagagcgcgt caggcgggcg cggcccgggtg 420
 gaggaaatgg aggactggat gaaggccgcg cgctccggat gcgtccgctg gatcatcaag 480
 accacggcga tgttcgggtt cggcggaag accgcttacg tggccgtgaa ttacctcgat 540
 cgcttcctgg cgcaacggcg agtcaatagg gagcatgcgt ggggtctgca gctgctcatg 600
 gtggcggtgca tgcgctggc gaccaagctg gaggagcacc acgctccgcg gctgtcggag 660
 ttcccgtggt acgctgcca gttcgcgttc gacagcgcgt ccctcctgcg gatggagctc 720
 ctgcctcctg gcacctcga gtggcggtatg atcgccgtca ccccttccc ctacatcagc 780
 tacttcgcgg cgcggttccg ggagacgagc gccgggcaaa tcctcatgcg cgccgtggag 840
 tgcgtcttcg cggcgatcaa agtgataagc tcggtggagt aacggccgtc gaccatcgcc 900
 gtggcatcca tcctcgtcgc gcgnggccgg gaggagactc ccgccggcag cctggggangc 960
 gctcaaggcg nntcctcggg tcatcgtgcc cgcaantaga aaacggg 1007

<210> 8
 <211> 238

<212> PRT
<213> Zea mays

<220>
<221> UNSURE
<222> (227)

<400> 8

Met Gly Asp Ala Ala Ala Ser Thr Ser Ala Pro Thr Thr Pro Thr Ser
1 5 10 15

Ile Leu Ile Cys Leu Glu Asp Gly Ser Asp Leu Leu Ala Asp Ala Asp
20 25 30

Asp Gly Ala Gly Thr Asp Leu Val Val Ala Arg Asp Glu Arg Leu Leu
35 40 45

Val Val Asp Gln Asp Glu Glu Tyr Val Ala Leu Leu Leu Ser Lys Glu
50 55 60

Ser Ala Ser Gly Gly Gly Gly Pro Val Glu Glu Met Glu Asp Trp Met
65 70 75 80

~~Lys Ala Ala Arg Ser Gly Cys Val Arg Trp Ile Ile Lys Thr Thr Ala~~
~~85 90 95~~

Met Phe Arg Phe Gly Gly Lys Thr Ala Tyr Val Ala Val Asn Tyr Leu
100 105 110

Asp Arg Phe Leu Ala Gln Arg Arg Val Asn Arg Glu His Ala Trp Gly
115 120 125

Leu Gln Leu Leu Met Val Ala Cys Met Ser Leu Ala Thr Lys Leu Glu
130 135 140

Glu His His Ala Pro Arg Leu Ser Glu Phe Pro Leu Asp Ala Cys Glu
145 150 155 160

Phe Ala Phe Asp Ser Ala Ser Ile Leu Arg Met Glu Leu Leu Val Leu
165 170 175

Gly Thr Leu Glu Trp Arg Met Ile Ala Val Thr Pro Phe Pro Tyr Ile
180 185 190

Ser Tyr Phe Ala Ala Arg Phe Arg Glu Thr Ser Ala Gly Arg Ile Leu
195 200 205

Met Arg Ala Val Glu Cys Val Phe Ala Ala Ile Lys Val Ile Ser Ser
210 215 220

Val Glu Xaa Arg Pro Ser Thr Ile Ala Val Ala Ser Ile Leu
225 230 235

<210> 9
<211> 510
<212> DNA
<213> Oryza sativa

<220>
<221> unsure
<222> (424)

<220>
<221> unsure
<222> (441)

<400> 9
 cttacagctt cctcctcgtt ttgctgggtg cagacgaacg cgggattccg gttcagcttg 60
 aagacggcgt atgtcgcggt gacgtatctc gatcggttct tggcgcgccg gtgtgtcgat 120
 agggacaagg agtgggagct gcagctcctc tcgggtggcg gcctgtcgtt ggcggcgaag 180
 gtggaggagc gccgggccgc gcgggtgccg gagttcaagc tggacatgta cgactgcgcg 240
 tccttgatgc ggatggagct cctcgtcttc accacgctca agtggcagat gatcaccgag 300
 acacccttct cctacctgaa ctgttcaccg cgaaattccg gcacgacgag cggaaggcat 360
 cgtcctgcgc gccatcgaat gcattcttcg tcgatcaaag tcatagctcg gtgggtacag 420
 catnacgatc gctctagcag natctatcgt cggaacaagg agacggcgtt aattagacga 480
 ctaagtcgtc gtggctctat ggagcactaa 510

<210> 10
 <211> 181
 <212> PRT
 <213> Oryza sativa

<400> 10
 His Glu Leu Thr Ala Ser Ser Ser Leu Cys Trp Leu Gln Thr Asn Ala
 1 5 10 15

Gly Phe Arg Phe Ser Leu Lys Thr Ala Tyr Val Ala Val Thr Tyr Leu
 20 25 30

~~Asp Arg Phe Leu Ala Arg Arg Cys Val Asp Arg Asp Lys Glu Trp Ala~~
 35 40 45

Leu Gln Leu Leu Ser Val Ala Cys Leu Ser Leu Ala Ala Lys Val Glu
 50 55 60

Glu Arg Arg Pro Pro Arg Leu Pro Glu Phe Lys Leu Asp Met Tyr Asp
 65 70 75 80

Cys Ala Ser Leu Met Arg Met Glu Leu Leu Val Leu Thr Thr Leu Lys
 85 90 95

Trp Gln Met Ile Thr Glu Thr Pro Phe Ser Tyr Leu Asn Cys Phe Thr
 100 105 110

Ala Lys Phe Arg His Asp Glu Arg Lys Ala Ile Val Leu Arg Ala Ile
 115 120 125

Glu Cys Ile Phe Ala Ser Ile Lys Val Ile Ser Ser Val Gly Tyr Gln
 130 135 140

Pro Ser Thr Ile Ala Leu Ala Ala Ile Leu Ile Ala Arg Asn Lys Glu
 145 150 155 160

Thr Ala Pro Asn Leu Asp Glu Leu Ser Val His Arg Leu Ala Pro Trp
 165 170 175

Gln Leu Met Met Leu
 180

<210> 11
 <211> 2259
 <212> DNA
 <213> Glycine max

<400> 11
 acaacttctc ccactcattc atcaacaacc acacacactc tctctcccct ctctgcacca 60
 aaaccacttc tccggcgaca tctccggtca ggttccggca acctcatcgg cgaatcggca 120
 tgccaacaca atgaatgcgg aacctccgct gccgccggcg ctctcatgtt cggtttcttg 180
 cctctccgac tacgacctcc tctgcggcga ggactcctcc ggaatcctct ccggagagtc 240
 gccggagtgc tccttctccg acatcgactc ctcacctcct ccgccgtcgc cgacgacaga 300
 ggattgttat tcgatcgca gcttcacga gcacgagcgc aacttcgttc cgggattcga 360
 gtacctgtcg cggttccaat ctcgctccct ggacgccaac gccagagaag aatcagttgg 420


```

atggattctc aaggtacacg cgtactatgg ctttcagcct ttgacggcgt acctcgccgt 480
caactatatg gatcgggtttt tggattctcg ccggttgccg gaaacaaatg ggtggcctct 540
gcaacttgta tctgttgcac gcttgtcttt ggcagcaaag atggaagaac ctcttggtcc 600
atctctcttg gaccttcaga tagaagggtgc caagtacata tttagagccga gaacaattcg 660
taggatggag ctacttggtc tcggtgtctt agattggagg ctaagatcag taacaccact 720
ttgcttcctc gctttctttg cgtgcaaagt agattcaact ggaactttta tccggttctt 780
tatttccagg gcaacagaaa tcatcgtatc taatatccaa gaggctagct ttcttgctta 840
ctggccttca tgcattgctg ctgcagccat actcactgca gctaataaaa ttcctaattg 900
gtctgtggtt aagcccgaag atgctgagtc atggtgagag ggactaagaa aagaaaaagt 960
aatagggtgc taccagttga tgcaagagct tgtgattaac aataaccaac ggaaactccc 1020
cttactaaaa gtgttgccgc agctgcgagt aacaactcgg acccgaatga ggtcaagtac 1080
tgtatcatca ttctcatcat cctcttcaac ctcttctctc ttgtcttgta agaggaggaa 1140
attaataaac cgtttgtggg tagatgacaa aggaaactcc gagtgaagag aaaacgaaca 1200
acaataataa aagaaggga gaaaaagaga gggaataagg tgggccaagt tgtctagaaa 1260
cctcaacatt ttttagaggg tttttgcaat taaaaaatga cttgagttag ggtgtagatt 1320
ataatagtat atatatgata tatctctatc gtatatacta agagagtttg atgggttttg 1380
agtaattttt atttttatgt tgggtgactta ttaatatgta gtttgacaga ttcacctagg 1440
gaagagggat tttgcgacat gttaccgtgg gagaggaaat gagagaagaa agaagtgaag 1500
cactgaacca ggggtagaag aatttaagt gatttgttct tgtaacctgt gattctgaag 1560
gaaagaattg agttgcgggc tggatttcaa agtttgcatt aattacttgg tgaaggagat 1620
gaaagatggt gggggcaacg ctgtagagat tgagaagaag aaaaagtaga gagaaggat 1680
gaaaaactct ggtgattatt gaaagttgaa acttagaagt ttgaagtgtt caatgttcat 1740
atcatggtat tcataagtca agcaaagctt catttcttgg ccagcatcac tgcttcttca 1800
tcaatcaagt tactactact ttgatgggac cctcaacagt aaagaacaat tgaagggcaa 1860
taagttgaag tttggctaca aatcgtggac tttttttgtt ggggtattggc acgtgtgcag 1920
tcggttcttg tgcgtgcaa tgaagtgtgt acgtgtgatt tttctttttc ttggtttttc 1980
tttgcgaggag ctgtttatat attttttctt atttttggcc atgagttttg gcctaactat 2040
acaggactcc aatggctggt gtccgcgcgt gtgatggaaa cacgtgtata tataggtttt 2100
aatttaaaaa ccttgaattt ttttatattgt tttcaagaga ggagaaccct ctttcacata 2160
ggggtaaaaa gtctttgggg cctttttctt gtgtgctgtg tattggattg attaatatat 2220
aatgacaact attaatctt taaaaaaaaa aaaaaaaaaa 2259

```

<210> 12
 <211> 339
 <212> PRT
 <213> Glycine max

<400> 12
 Met Ser Val Ser Cys Leu Ser Asp Tyr Asp Leu Leu Cys Gly Glu Asp
 1 5 10 15
 Ser Ser Gly Ile Leu Ser Gly Glu Ser Pro Glu Cys Ser Phe Ser Asp
 20 25 30
 Ile Asp Ser Ser Pro Pro Pro Pro Ser Pro Thr Thr Glu Asp Cys Tyr
 35 40 45
 Ser Ile Ala Ser Phe Ile Glu His Glu Arg Asn Phe Val Pro Gly Phe
 50 55 60
 Glu Tyr Leu Ser Arg Phe Gln Ser Arg Ser Leu Asp Ala Asn Ala Arg
 65 70 75 80
 Glu Glu Ser Val Gly Trp Ile Leu Lys Val His Ala Tyr Tyr Gly Phe
 85 90 95
 Gln Pro Leu Thr Ala Tyr Leu Ala Val Asn Tyr Met Asp Arg Phe Leu
 100 105 110
 Asp Ser Arg Arg Leu Pro Glu Thr Asn Gly Trp Pro Leu Gln Leu Val
 115 120 125
 Ser Val Ala Cys Leu Ser Leu Ala Ala Lys Met Glu Glu Pro Leu Val
 130 135 140

Pro Ser Leu Leu Asp Leu Gln Ile Glu Gly Ala Lys Tyr Ile Phe Glu
145 150 155 160

Pro Arg Thr Ile Arg Arg Met Glu Leu Leu Val Leu Gly Val Leu Asp
165 170 175

Trp Arg Leu Arg Ser Val Thr Pro Leu Cys Phe Leu Ala Phe Phe Ala
180 185 190

Cys Lys Val Asp Ser Thr Gly Thr Phe Ile Arg Phe Leu Ile Ser Arg
195 200 205

Ala Thr Glu Ile Ile Val Ser Asn Ile Gln Glu Ala Ser Phe Leu Ala
210 215 220

Tyr Trp Pro Ser Cys Ile Ala Ala Ala Ala Ile Leu Thr Ala Ala Asn
225 230 235 240

Glu Ile Pro Asn Trp Ser Val Val Lys Pro Glu Asn Ala Glu Ser Trp
245 250 255

Cys Glu Gly Leu Arg Lys Glu Lys Val Ile Gly Cys Tyr Gln Leu Met
260 265 270

Gln Glu Leu Val Ile Asn Asn Asn Gln Arg Lys Leu Pro Leu Leu Lys
275 280 285

Val Leu Pro Gln Leu Arg Val Thr Thr Arg Thr Arg Met Arg Ser Ser
290 295 300

Thr Val Ser Ser Phe Ser Ser Ser Ser Ser Thr Ser Phe Ser Leu Ser
305 310 315 320

Cys Lys Arg Arg Lys Leu Asn Asn Arg Leu Trp Val Asp Asp Lys Gly
325 330 335

Asn Ser Glu

<210> 13
<211> 1994
<212> DNA
<213> Glycine max

<400> 13
gcacgagccg gaatcatgga ttcctcgccg gagtggtcct ccgacctcga ttcctcgccg 60
ccgtcggagg cggagtccat cgccggattc atggaagacg agcgcaactt cgtccccgga 120
ttcgaatacc tcaataggtt ccaatctcgc tctctcgacg cctctgccag agaagaatcc 180
gttgcatgga ttctcaaggt gcaggcttat tacgcttttc aaccgggtcac ggcttatctt 240
tccgttaact acttgatag gttcttgaat tctcgaccgt tgccgccgaa aacgaatggg 300
tggccactgc aacttctctc tgttgcggtgc ttgtcttttag cagcaaagat ggaggaatct 360
ctagttccat ctcttttgga ccttcaggta gaaggtgcta aatacgtatt tgaaccctaa 420
acaattagaa gaatggagct acttggtctg ggcggtgttg attggaggct aagatcgggt 480
accccattta gcttcctcga tttctttgcg tgcaagttag attcaactgg gacttttacc 540
gggttcctca tttcacgtgc tacacaaatt atcttatcta atatacaaga ggctagcttt 600
cttgcggtatt ggccatcatg cattgctgca gcagccattc tccatgcagc aaatgaaatt 660
cctaattggt ctctcggttag gcctgagcat gcagagtcatt ggtgtgaggg gttaagaaag 720
gagaaaatta tagggtgcta ccaattaatg caagaacttg tgattgacaa taaccagagg 780
aaacccccta aggtgttacc acagctgcga gtgacaatat ctcggcccat tatgaggtct 840
agtgtctcat ccttcttagc atcatcctct tcaccttcat catcctcttt gtctttaga 900
aggaggaaat taaataactc tttgtgggta gacgatgaca aaggaaactc ccaatgaaga 960
gaaaaagaac aataatagag gaggaaaaaa agaagaataa tgaaataagg tgggtggacgg 1020
tgggtccaagt tgtccagaaa ccgcaaaatt tttaagaggg tttttttgag tataaaatgg 1080
actagagagt cgaggtgtac attataatat agactatatt ttatgagagt tgcgagcttt 1140
tattattttg ttggtgggtg ttgccattca tcaatggcat tgcagattcc ctagggaagg 1200
ggattttgca aagtgtgtgt gggtgtgcgt gagagagagg tgggaaatta gatacaaga 1260

```

tgcatttaat ggtttggtcg tgcaagcgtg gaagaaagaa gtgtgtagtt tggaattcaa 1320
agatgcgctt gttattggtg aaagagaaga gaatgggtggg gggacattgc ttcagagctt 1380
ggaagaagaa aaaaagcata gtctcagagc agatatcaat agggattga aagactttga 1440
agtttgagct gtttcttctt attataatgg ggtctctaag tcaagctact catcttggcc 1500
agcatgcctc gcttcttcag ttacacgtt acttttggtg gtgtgatggg ataccactag 1560
agtacaaaaa aagaaatagc aataaggtga atcttatcac attttgtgga cttatgatga 1620
tacgtgtgag acgcctctgg tgtgtgtctc gcacgtgcct acgtgtgatt ttttattttt 1680
atztatgttt tagctatggc gggaaatgct ttttatttct ttatttcttt tttggcttga 1740
gctttggcct aactatacag gatccattgc ctggtgtcca cgcgtgatgg aaacacgtgt 1800
ctatagtttt cattttttgt tttggatttt ttcattttgt ttcaagagag gagaaccctc 1860
ttttgttttc tttttagtgc ctaattggct ttgggagaaa ttggagtaaa ggcctttggg 1920
gccttttcct gagtgctttg tattgaattc attaataatg acactgttaa ttctataaaa 1980
aaaaaaaaaa aaaa

```

```

<210> 14
<211> 318
<212> PRT
<213> Glycine max

```

```

<400> 14
Ala Arg Ala Gly Ile Met Asp Ser Ser Pro Glu Cys Ser Ser Asp Leu
1 5 10 15

```

```

Asp Ser Ser Pro Pro Ser Glu Ala Glu Ser Ile Ala Gly Phe Met Glu
20 25 30

```

```

Asp Glu Arg Asn Phe Val Pro Gly Phe Glu Tyr Leu Asn Arg Phe Gln
35 40 45

```

```

Ser Arg Ser Leu Asp Ala Ser Ala Arg Glu Glu Ser Val Ala Trp Ile
50 55 60

```

```

Leu Lys Val Gln Ala Tyr Tyr Ala Phe Gln Pro Val Thr Ala Tyr Leu
65 70 75 80

```

```

Ser Val Asn Tyr Leu Asp Arg Phe Leu Asn Ser Arg Pro Leu Pro Pro
85 90 95

```

```

Lys Thr Asn Gly Trp Pro Leu Gln Leu Leu Ser Val Ala Cys Leu Ser
100 105 110

```

```

Leu Ala Ala Lys Met Glu Glu Ser Leu Val Pro Ser Leu Leu Asp Leu
115 120 125

```

```

Gln Val Glu Gly Ala Lys Tyr Val Phe Glu Pro Lys Thr Ile Arg Arg
130 135 140

```

```

Met Glu Leu Leu Val Leu Gly Val Leu Asp Trp Arg Leu Arg Ser Val
145 150 155 160

```

```

Thr Pro Phe Ser Phe Leu Asp Phe Phe Ala Cys Lys Leu Asp Ser Thr
165 170 175

```

```

Gly Thr Phe Thr Gly Phe Leu Ile Ser Arg Ala Thr Gln Ile Ile Leu
180 185 190

```

```

Ser Asn Ile Gln Glu Ala Ser Phe Leu Ala Tyr Trp Pro Ser Cys Ile
195 200 205

```

```

Ala Ala Ala Ala Ile Leu His Ala Ala Asn Glu Ile Pro Asn Trp Ser
210 215 220

```

```

Leu Val Arg Pro Glu His Ala Glu Ser Trp Cys Glu Gly Leu Arg Lys
225 230 235 240

```

Glu Lys Ile Ile Gly Cys Tyr Gln Leu Met Gln Glu Leu Val Ile Asp
245 250 255

Asn Asn Gln Arg Lys Pro Pro Lys Val Leu Pro Gln Leu Arg Val Thr
260 265 270

Ile Ser Arg Pro Ile Met Arg Ser Ser Val Ser Ser Phe Leu Ala Ser
275 280 285

Ser Ser Ser Pro Ser Ser Ser Ser Leu Ser Cys Arg Arg Arg Lys Leu
290 295 300

Asn Asn Ser Leu Trp Val Asp Asp Asp Lys Gly Asn Ser Gln
305 310 315

<210> 15
<211> 570
<212> DNA
<213> Triticum aestivum

<220>
<221> unsure
<222> (499)

<220>
<221> unsure
<222> (515)..(516)

<220>
<221> unsure
<222> (558)

<400> 15
acagagggttc acctaaaaaa aggctagcag ttcttcccaa agagacaaca gttctaagaa 60
aagaagcagg agctgcagct ggtgagcgtc tgtgccctgc tgattgcgtg caagtacgaa 120
gagatttggg ctccagaggt gaacgacttc atattgttct ccgacaacac atatactagg 180
gagcagattc tgaggatgga gaaggcaatc ctgaacatgc ttgagtggaa cctgacagtg 240
cccacacctt acgtcttcct cgtgtgattc gccaaaggccg catcctcctg agataagaag 300
aacggcaagg aggtaaaagg aacaccagat tttaacaaat cctcagatgt agtacgtatc 360
tccatttgcc aaacatgatc tattgctgaa ttctgttctc cctgggtgtat tgtctaaatg 420
gagacacgtc tttttttcgt ggactggcgc tctgtagtat ggacagaata tgtttgattc 480
agcacacaag agacaggtna tcaacacaca gtagnnacag tgtctgtaca gccgtataca 540
taacattata cttctcanag accactttgg 570

<210> 16
<211> 75
<212> PRT
<213> Triticum aestivum

<220>
<221> UNSURE
<222> (68)

<400> 16
Lys Gln Glu Leu Gln Leu Val Ser Val Cys Ala Leu Leu Ile Ala Cys
1 5 10 15

Lys Tyr Glu Glu Ile Trp Ala Pro Glu Val Asn Asp Phe Ile Leu Phe
20 25 30

Ser Asp Asn Thr Tyr Thr Arg Glu Gln Ile Leu Arg Met Glu Lys Ala
35 40 45

Ile Leu Asn Met Leu Glu Trp Asn Leu Thr Val Pro Thr Pro Tyr Val
50 55 60

Phe Leu Val Xaa Phe Ala Lys Ala Ala Ser Ser
65 70 75

<210> 17
<211> 1932
<212> DNA
<213> Zea mays

<220>
<221> unsure
<222> (8)

<220>
<221> unsure
<222> (26)

<220>
<221> unsure
<222> (159)

<400> 17
gccacaantg caccgcagac sgcaentsgg cctccctcct ccgtccgtcc gtcctcttcc 60
ttgtgccttg tcctcctcca ctccgccactg ccgcattctg eeeaaagtccc aaacacgcgc 120
accagccacc cagcactcca gccgccagac cagagtcctc ggccgccgag tgcacagaca 180
ggagagggag agatacgcgg gctttgactt gccgccggtg cgtccgtgag tgcctggtgg 240
gaatagtggg agacgccggg acagtacagg agccatggcg ccgagctgct acgacgcggc 300
agcgtccatg ctctctctgc ccgaggagca cagcagcatc ctgtggtacg aggaggagga 360
ggaggagctg gaggcggctg ggagaaggag cggccggtcg ccgggctacg gggacgactt 420
cggcgccgag ttgttcccgc cgcagtcgga ggaatgcgtg gccggtcttg tggagcggga 480
acgggaccac atgccggggc cgtgctacgg cgacaggctg ccggcgggcg gcggtgtctt 540
ctgcgtccgc cgggaggccg tgcactggat ttggaaggct tacacgcacc acagggtccg 600
ccctctcact gcctacttgg cagtgaacta cctcgatcgc ttctctcgc tgtctgaggt 660
gccggactgc aaggactgga tgacgcagct cctcgcggtg gcgtgcgttt ctctggccgc 720
caagatggag gaaaccgccg tcccgcagtg cctggacctt caggaggctg gagacgcgcg 780
gtacgtgttc gaggcgaaga cgggtccagag gatggagctc ctggttctaa caaccctcaa 840
ctggaggatg catgccgtga cgcggttctc ctacgtggat tacttctga acaagctcaa 900
caacggcggc agcacggcgc cgaggagctg ctggctcttg cagtccgcgg agcttatctt 960
gcgtgcggcc agaggaaccg gctgcgtcgg gttcaggccg tccgagatcg ccgccgcggt 1020
tgcagccgcc gtggccggag acgtggacga cgcggacggc gtcgagaacg cctgctgcgc 1080
tcacgtagat aaggagcggg tgttgcggtg ccaggaagcg atcgggtcca tggcgctctc 1140
ggcgccatt gacgacgcta ccgtgccacc gaaatctgcg agacgcagga gctccccctg 1200
gcccgtgccg cagagccctg tgggggtgct ggacgcggct cctgcctca gctacaggag 1260
cgaagaggca gcgactgcga ctgcgactgc gacttctgct gcctcacatg gggcccctgg 1320
ctcttcaagc tcgtcctcga cctccccggt gaccagcaaa aggaggaaac tcgccagccg 1380
atgtgatgga tcgtgcagtg accggtcaaa gcgcgcgccc gcccaatgga ccaaagagtg 1440
aattgactag ggcgtctgct tgctttctga tcaaagagtg cattgagagg cggcaaaatg 1500
gaggaataaa ggggattttg gcatgacgag ggcaaaggag ttgatgaata aagacgcgac 1560
gaggtggaca acacctaaat tgccgatctt ttctttgcaa ggggagtagg ggacctgctt 1620
gggcctgggg gagggtagta gacagcccag caaaaaacc tggttggtgt gccacgacca 1680
caatgggcgc gccagccatg gctttgtagg aaacacaagg gcgctagagg agatccgatg 1740
ggatgactca gaataaagat agtggaggga ccagaccgta tgcagtatgt gcaacaacta 1800
ggcactggca tgcttatgct caagtaatct gataacttga atgttggtga tccgacaaac 1860
tgcttctgtg aagagagaaa tgcaggtaga cgatgaatgt atgtgaaaaa aaaaaaaaaa 1920
aaaaaaaaaa ac 1932

<210> 18
<211> 388
<212> PRT
<213> Zea mays

<400> 18
Met Ala Pro Ser Cys Tyr Asp Ala Ala Ala Ser Met Leu Leu Cys Ala
1 5 10 15
Glu Glu His Ser Ser Ile Leu Trp Tyr Glu Glu Glu Glu Glu Glu Leu
20 25 30

Glu	Ala	Val	Gly	Arg	Arg	Ser	Gly	Arg	Ser	Pro	Gly	Tyr	Gly	Asp	Asp		
		35					40					45					
Phe	Gly	Ala	Asp	Leu	Phe	Pro	Pro	Gln	Ser	Glu	Glu	Cys	Val	Ala	Gly		
	50					55					60						
Leu	Val	Glu	Arg	Glu	Arg	Asp	His	Met	Pro	Gly	Pro	Cys	Tyr	Gly	Asp		
65					70					75					80		
Arg	Leu	Arg	Gly	Gly	Gly	Gly	Cys	Leu	Cys	Val	Arg	Arg	Glu	Ala	Val		
				85					90					95			
Asp	Trp	Ile	Trp	Lys	Ala	Tyr	Thr	His	His	Arg	Phe	Arg	Pro	Leu	Thr		
			100					105					110				
Ala	Tyr	Leu	Ala	Val	Asn	Tyr	Leu	Asp	Arg	Phe	Leu	Ser	Leu	Ser	Glu		
		115					120					125					
Val	Pro	Asp	Cys	Lys	Asp	Trp	Met	Thr	Gln	Leu	Leu	Ala	Val	Ala	Cys		
	130					135					140						
Val	Ser	Leu	Ala	Ala	Lys	Met	Glu	Glu	Thr	Ala	Val	Pro	Gln	Cys	Leu		
145					150					155					160		
Asp	Leu	Gln	Glu	Val	Gly	Asp	Ala	Arg	Tyr	Val	Phe	Glu	Ala	Lys	Thr		
				165					170					175			
Val	Gln	Arg	Met	Glu	Leu	Leu	Val	Leu	Thr	Thr	Leu	Asn	Trp	Arg	Met		
			180					185					190				
His	Ala	Val	Thr	Pro	Phe	Ser	Tyr	Val	Asp	Tyr	Phe	Leu	Asn	Lys	Leu		
		195					200					205					
Asn	Asn	Gly	Gly	Ser	Thr	Ala	Pro	Arg	Ser	Cys	Trp	Leu	Leu	Gln	Ser		
	210					215					220						
Ala	Glu	Leu	Ile	Leu	Arg	Ala	Ala	Arg	Gly	Thr	Gly	Cys	Val	Gly	Phe		
225					230					235					240		
Arg	Pro	Ser	Glu	Ile	Ala	Ala	Ala	Val	Ala	Ala	Ala	Val	Ala	Gly	Asp		
				245					250					255			
Val	Asp	Asp	Ala	Asp	Gly	Val	Glu	Asn	Ala	Cys	Cys	Ala	His	Val	Asp		
			260					265					270				
Lys	Glu	Arg	Val	Leu	Arg	Cys	Gln	Glu	Ala	Ile	Gly	Ser	Met	Ala	Ser		
		275					280					285					
Ser	Ala	Ala	Ile	Asp	Asp	Ala	Thr	Val	Pro	Pro	Lys	Ser	Ala	Arg	Arg		
	290					295					300						
Arg	Ser	Ser	Pro	Val	Pro	Val	Pro	Gln	Ser	Pro	Val	Gly	Val	Leu	Asp		
305					310					315					320		
Ala	Ala	Pro	Cys	Leu	Ser	Tyr	Arg	Ser	Glu	Glu	Ala	Ala	Thr	Ala	Thr		
				325					330					335			
Ala	Thr	Ala	Thr	Ser	Ala	Ala	Ser	His	Gly	Ala	Pro	Gly	Ser	Ser	Ser		
			340					345					350				
Ser	Ser	Ser	Thr	Ser	Pro	Val	Thr	Ser	Lys	Arg	Arg	Lys	Leu	Ala	Ser		
		355					360					365					
Arg	Cys	Asp	Gly	Ser	Cys	Ser	Asp	Arg	Ser	Lys	Arg	Ala	Pro	Ala	Gln		
	370					375					380						

Trp Thr Lys Glu
385

<210> 19
<211> 481
<212> DNA
<213> Oryza sativa

<220>
<221> unsure
<222> (88)

<220>
<221> unsure
<222> (130)

<220>
<221> unsure
<222> (251)

<220>
<221> unsure
~~<222> (311)~~

<220>
<221> unsure
<222> (352)

<220>
<221> unsure
<222> (359)

<220>
<221> unsure
<222> (394)

<220>
<221> unsure
<222> (400)

<220>
<221> unsure
<222> (408)

<220>
<221> unsure
<222> (410)

<220>
<221> unsure
<222> (415)

<220>
<221> unsure
<222> (420)

<220>
<221> unsure
<222> (426)

<220>
<221> unsure
<222> (432) .. (433)

<220>
<221> unsure
<222> (448)

<220>
<221> unsure
<222> (457)

<220>
<221> unsure
<222> (461)..(462)

<220>
<221> unsure
<222> (470)

<220>
<221> unsure
<222> (475)

<400> 19
cttacatgta agctcgtgcc gaattcggca cgagcttaca cgagcgcgaac ccatggggcgc 60
cgcggtctgct cgccatcagc tgcctcanc tgcgcgcca gatgcagcgc gccgcccga 120
~~tetecgccgn cgacatccag aggggcgagg agttcatgtt cgacgaggcg aaaatccagc 180~~
gcatggagca gatggtgctc aacgcgctgg agtggcgagc gcgctccgtc acgcccgtcg 240
ccttcctcgg nttctttctc tccgcgtggt tcccgcaagc cgcggcaccc ggcgctgctc 300
gatgccatca nggcccgcgc gtcgagctcc tctccgcgt ctaagccggg angtgaacna 360
tggtgggagt tctccccctt cgggtggccgg ccgncgcggn tctcctcnen gccgncggan 420
aaggntccg gnngcccaaa ctcttctnct tccaaanctg nnggccccgn tttgncccct 480
t 481

<210> 20
<211> 110
<212> PRT
<213> Oryza sativa

<220>
<221> UNSURE
<222> (26)

<220>
<221> UNSURE
<222> (40)

<220>
<221> UNSURE
<222> (100)

<400> 20
Ala Arg Ala Glu Phe Gly Thr Ser Leu His Glu Arg Asn Pro Trp Ala
1 5 10 15
Pro Arg Leu Leu Ala Ile Ser Cys Leu Xaa Leu Ala Ala Lys Met Gln
20 25 30
Arg Ala Ala Ala Ile Ser Ala Xaa Asp Ile Gln Arg Gly Glu Glu Phe
35 40 45
Met Phe Asp Glu Ala Lys Ile Gln Arg Met Glu Gln Met Val Leu Asn
50 55 60
Ala Leu Glu Trp Arg Thr Arg Ser Val Thr Pro Leu Ala Phe Leu Gly
65 70 75 80
Phe Phe Leu Ser Ala Trp Phe Pro Gln Ala Ala Ala Pro Gly Ala Ala
85 90 95

Arg Cys His Xaa Gly Arg Ala Val Glu Leu Leu Leu Arg Val
100 105 110

<210> 21
<211> 789
<212> DNA
<213> Triticum aestivum

<400> 21
cacctgaggg cgactcgagg gtgccctcgc cccgtccgcc gtgaccaccc ctcttcggat 60
ctcaccgcct cgaccaaagt gtgatttgag gcaaattctg cgtttgaggc aaggacaata 120
aaagtgatgg agcttttggg cttcagcacc ttgaaatgga ggatgcaagc tgttactgct 180
tgctcgttta ttgactactt cttttgcaaa ttcaatgatc atgacacacc ctccatgctt 240
gcattctcct gctcaactga cctcatcctg agcacaacta agtgagctga ttttttgggtg 300
ttcagacatt cagagattgc tggaagtgtt gcacttcctt catttgggga gcacaagact 360
tcagttgtcg aaatggctac aactaattgc aagtatataa acaaggaggat gtgatgtgac 420
aggaaagatc ctgatgaagt gcttccttta tggaatgcct atctgaagtt tggactaaga 480
gacatgcttt aattggctta gtaaaaaata cttgctaaag agaaataaga ttcaaagtag 540
atgtttttat tgtagattag gatattgtgtg ttctgccacc ggctcgactt ctcatattag 600
aaggcaagca gttagttcat atcttactac tttgcactat tgtagatgga tggtagaggga 660
ttgagaggct actactatta atgtgcgtaa actttgcacg tttagctctc taaatgaaac 720
cggatgatgg taacctgaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 780
aaaaaaaaaa

<210> 22
<211> 163
<212> PRT
<213> Triticum aestivum

<220>
<221> UNSURE
<222> (28)

<220>
<221> UNSURE
<222> (95)

<220>
<221> UNSURE
<222> (138)

<400> 22
His Leu Arg Ala Thr Arg Gly Cys Pro Arg Pro Val Arg Arg Asp His
1 5 10 15
Pro Ser Ser Asp Leu Thr Ala Ser Thr Lys Met Xaa Phe Glu Ala Asn
20 25 30
Ser Ala Phe Glu Ala Arg Thr Ile Lys Val Met Glu Leu Leu Val Phe
35 40 45
Ser Thr Leu Lys Trp Arg Met Gln Ala Val Thr Ala Cys Ser Phe Ile
50 55 60
Asp Tyr Phe Leu Cys Lys Phe Asn Asp His Asp Thr Pro Ser Met Leu
65 70 75 80
Ala Phe Ser Cys Ser Thr Asp Leu Ile Leu Ser Thr Thr Lys Xaa Ala
85 90 95
Asp Phe Leu Val Phe Arg His Ser Glu Ile Ala Gly Ser Val Ala Leu
100 105 110
Pro Ser Phe Gly Glu His Lys Thr Ser Val Val Glu Met Ala Thr Thr
115 120 125

Asn Cys Lys Tyr Ile Asn Lys Gly Val Xaa Cys Asp Arg Lys Asp Pro
 130 135 140

Asp Glu Val Leu Pro Leu Trp Asn Ala Tyr Leu Lys Phe Gly Leu Arg
 145 150 155 160

Asp Met Leu

<210> 23
 <211> 603
 <212> DNA
 <213> Zea mays

<220>
 <221> unsure
 <222> (441)

<220>
 <221> unsure
 <222> (447)

<220>
 <221> unsure
 <222> (485)

<220>
 <221> unsure
 <222> (498)

<220>
 <221> unsure
 <222> (528)

<220>
 <221> unsure
 <222> (553)

<220>
 <221> unsure
 <222> (560)

<220>
 <221> unsure
 <222> (576)..(577)

<220>
 <221> unsure
 <222> (598)

<400> 23
 aacagaattc ggcacgagcc gcggtcggtt gggtttcacg cgccgcggcg cggctaggct 60
 tctccgcgct caccgccgcg ctccgccgcg cctacctcga ccgctgcttc ctccccgggg 120
 gcgcgctccg gctcggcgac cagccctgga tggcgcgcct agccgcgcgc acctgcttcg 180
 cgctcgcgcg caaggtcgag gagacgcgcg tgccgcgcgt cctcgacctc cagctctacg 240
 ccgccgctga cgcgcgggat ccgtacgtat tcgaggccaa gacggtgcgc cggatggagc 300
 tgctcgtgct ctccgcgctt ggggtggcgga tgcacctgt caccgccttc tcctacctcc 360
 agcccgctct cgcgcagcgt ggcgacgcgc tgcgtagctg cgagggcgtc ctgctcgcgg 420
 tcatggccga ctggaggtgg cctcggcacc ggccttcggc gtggggccgc gccgcgttgc 480
 tgatcacagc cgcgcgcggc gacggcggcg acggcgacgg cgacacggag ctctggcgcg 540
 tcatcaatgc ccccgaggac aagaccgccc agtgtgccaa gatcatctcc gaggtgacgg 600
 gcatgagctt cctcgcctgc gatgtcggcg tgagcgccgg aaataagcgt aagcacgcgg 660
 cggcgcagtt gtactcgcgc ccgcccagcc cgagcggcgt gatcggcgcg ctgtcctgct 720
 tcagctgcga gagctcgacg tccgccaccg ctatggctgc ggcggtcggc ccgtgggcgc 780
 cgctcggcgtc cgtgtccgtg tcgtcctctc cagagccacc aggtcgggccc cccaagcgcg 840

cagcggcggc gtcggcgctcg gcgtcggcgt cagccgggggt cgcgccaccg gtccaggtcc 900
 cgcacacagct acccccccgac gaggagagcc gcgacgcctg gccgtccacc tgcgccgcgt 960
 gacgcaccgt gccggaaacg gtgcctatgg cgagaccgcc gttcgggtggc ggtggagaat 1020
 ggagaacaag gagcatcatt ggctcgcgtc ggtgagcagg agaacgaact attttgccca 1080
 ttgccgtgac agatggggggg tgttcactgc gtggagccgc gctgancaat ga 1132

<210> 24
 <211> 318
 <212> PRT
 <213> Zea mays

<400> 24
 Asn Ser Ala Arg Ala Ala Val Gly Trp Val Ser Arg Ala Ala Ala Arg
 1 5 10 15
 Leu Gly Phe Ser Ala Leu Thr Ala Ala Leu Ala Ala Ala Tyr Leu Asp
 20 25 30
 Arg Cys Phe Leu Pro Gly Gly Ala Leu Arg Leu Gly Asp Gln Pro Trp
 35 40 45
 Met Ala Arg Leu Ala Ala Val Thr Cys Phe Ala Leu Ala Ala Lys Val
 50 55 60

Glu Glu Thr Arg Val Pro Pro Leu Leu Asp Leu Gln Leu Tyr Ala Ala
 65 70 75 80
 Ala Asp Ala Ala Asp Pro Tyr Val Phe Glu Ala Lys Thr Val Arg Arg
 85 90 95
 Met Glu Leu Leu Val Leu Ser Ala Leu Gly Trp Arg Met His Pro Val
 100 105 110
 Thr Pro Phe Ser Tyr Leu Gln Pro Val Leu Ala Asp Ala Ala Thr Arg
 115 120 125
 Leu Arg Ser Cys Glu Gly Val Leu Leu Ala Val Met Ala Asp Trp Arg
 130 135 140
 Trp Pro Arg His Arg Pro Ser Ala Trp Ala Ala Ala Ala Leu Leu Ile
 145 150 155 160
 Thr Ala Ala Ala Gly Asp Gly Gly Asp Gly Asp Gly Asp Thr Glu Leu
 165 170 175
 Leu Ala Leu Ile Asn Ala Pro Glu Asp Lys Thr Ala Glu Cys Ala Lys
 180 185 190
 Ile Ile Ser Glu Val Thr Gly Met Ser Phe Leu Ala Cys Asp Val Gly
 195 200 205
 Val Ser Ala Gly Asn Lys Arg Lys His Ala Ala Ala Gln Leu Tyr Ser
 210 215 220
 Pro Pro Pro Ser Pro Ser Gly Val Ile Gly Ala Leu Ser Cys Phe Ser
 225 230 235 240
 Cys Glu Ser Ser Thr Ser Ala Thr Ala Met Ala Ala Ala Val Gly Pro
 245 250 255
 Trp Ala Pro Ser Ala Ser Val Ser Val Ser Ser Ser Pro Glu Pro Pro
 260 265 270
 Gly Arg Ala Pro Lys Arg Ala Ala Ala Ala Ser Ala Ser Ala Ser Ala
 275 280 285

Ser Ala Gly Val Ala Pro Pro Val Gln Val Pro His Gln Leu Pro Pro
 290 295 300

Asp Glu Glu Ser Arg Asp Ala Trp Pro Ser Thr Cys Ala Ala
 305 310 315

<210> 25
 <211> 674
 <212> DNA
 <213> Glycine max

<220>
 <221> unsure
 <222> (527)

<220>
 <221> unsure
 <222> (561)

<220>
 <221> unsure
 <222> (640)

<220>
 <221> unsure
 <222> (643)

<400> 25
 cactcactca ccccttcctt tctaactcct caaattgtgt gttctgagaa tggaaatgcc 60
 tccttctcca tcggggcatt ccgcactctc catcccataa aagtcccaga tccaagatgg 120
 cttaccacca tcaaaaatcc cttttggaca ccctatactg ctccgaagag cattggatag 180
 gggaagggtga atttgaccaa gcagaggagg agtacggtaa cagtaatagc aatagtagca 240
 gcaccttagt aaacaactcc cctgagtcct cccctcattt gttgctcgaa agcgacatgt 300
 tttgggacga acaagagttg gcatcgctgt tggagaaaga acaacacaaac ccactaagca 360
 cttgctgtct ccaaagcaac cctgccttgg aggggtgctcg catagaagcc gtggagtgga 420
 ttctcaaagt aaacgcccac tactccttct ctgccctcac cgctgttctt gctgtcaact 480
 actttgaccg ttttctcttc agcttccgct ttcagaatga cattaancca tggatgactc 540
 ggggtcgctg ccgtcgcttg nctctccctc gctgccaaag tgggcgagac acacgttccc 600
 tttcttattt gacccttcaa caaagtggga ggaggagtan atnctttgtt ccaagccaaa 660
 gacgattaaa aaag 674

<210> 26
 <211> 186
 <212> PRT
 <213> Glycine max

<220>
 <221> UNSURE
 <222> (137)

<220>
 <221> UNSURE
 <222> (149)

<220>
 <221> UNSURE
 <222> (175)..(176)

<400> 26
 Met Ala Tyr His His Gln Lys Ser Leu Leu Asp Thr Leu Tyr Cys Ser
 1 5 10 15

Glu Glu His Trp Ile Gly Glu Gly Glu Phe Asp Gln Ala Glu Glu Glu
 20 25 30

Tyr Gly Asn Ser Asn Ser Asn Ser Ser Ser Thr Leu Val Asn Asn Ser
 35 40 45
 Pro Glu Ser Ser Pro His Leu Leu Leu Glu Ser Asp Met Phe Trp Asp
 50 55 60
 Glu Gln Glu Leu Ala Ser Leu Leu Glu Lys Glu Gln His Asn Pro Leu
 65 70 75 80
 Ser Thr Cys Cys Leu Gln Ser Asn Pro Ala Leu Glu Gly Ala Arg Ile
 85 90 95
 Glu Ala Val Glu Trp Ile Leu Lys Val Asn Ala His Tyr Ser Phe Ser
 100 105 110
 Ala Leu Thr Ala Val Leu Ala Val Asn Tyr Phe Asp Arg Phe Leu Phe
 115 120 125
 Ser Phe Arg Phe Gln Asn Asp Ile Xaa Pro Trp Met Thr Arg Gly Arg
 130 135 140
 Cys Arg Arg Leu Xaa Leu Pro Arg Cys Gln Ser Gly Arg Asp Thr Arg
 145 150 155 160

Ser Leu Ser Tyr Leu Thr Leu Gln Gln Ser Gly Arg Arg Ser Xaa Xaa
 165 170 175

Phe Val Pro Ser Gln Arg Arg Leu Lys Lys
 180 185

<210> 27
 <211> 554
 <212> DNA
 <213> Glycine max

<400> 27
 ctccctttca cctttcttca tagcctacca cttttctgct ttcattctact ctcacttctc 60
 ttcacacact gagacacaca gagagagaaa aataaagggt gtgatgggtg tcttactgag 120
 tgttttcttt ttataatgaa caaagaactg cacaccctct tcttcaccga agaagaagat 180
 ggcaattcag caccacaatg accaactaga gcataatgaa aatgtctcat ctgtccttga 240
 tgccctttac tgtgacgaag gaaagtggga agaggaagag gaggagaaag aagaagaaga 300
 agatgaaggt gaaaatgaaa gtgaagtgaac aacaaacact gcaacttgtc ttttccctct 360
 gctcttggtg gagcaagact tgttctggga agatgaggaa ctaaactcta tcttttccaa 420
 agagaaggtt caacatgaag aagcctatgg tataacaatc tgaacagtga tgtgtataac 480
 aacaacaaca atactagtat ataatgtgat ttggctcttg ctcttcagct cgtcggagcg 540
 tgatgatgct gaat 554

<210> 28
 <211> 94
 <212> PRT
 <213> Glycine max

<400> 28
 Met Ala Ile Gln His His Asn Asp Gln Leu Glu His Asn Glu Asn Val
 1 5 10 15
 Ser Ser Val Leu Asp Ala Leu Tyr Cys Asp Glu Gly Lys Trp Glu Glu
 20 25 30
 Glu Glu Glu Glu Lys Glu Glu Glu Glu Asp Glu Gly Glu Asn Glu Ser
 35 40 45
 Glu Val Thr Thr Asn Thr Ala Thr Cys Leu Phe Pro Leu Leu Leu Leu
 50 55 60

Glu Gln Asp Leu Phe Trp Glu Asp Glu Glu Leu Asn Ser Ile Phe Ser
 65 70 75 80
 Lys Glu Lys Val Gln His Glu Glu Ala Tyr Gly Ile Thr Ile
 85 90
 <210> 29
 <211> 372
 <212> PRT
 <213> Catharanthus roseus
 <400> 29
 Met Ala Asp Lys Glu Asn Cys Ile Arg Val Thr Arg Leu Ala Lys Lys
 1 5 10 15
 Arg Ala Val Glu Ala Met Ala Ala Ser Glu Gln Gln Arg Pro Ser Lys
 20 25 30
 Lys Arg Val Val Leu Gly Glu Leu Lys Asn Leu Ser Ser Asn Ile Ser
 35 40 45
 Ser Ile Gln Thr Tyr Asp Phe Ser Ser Gly Pro Gln Lys Gln Gln Lys
 50 55 60
 Asn Lys Asn Lys Arg Lys Ala Lys Glu Ser Leu Gly Phe Glu Val Lys
 65 70 75 80
 Glu Lys Lys Val Glu Glu Ala Gly Ile Asp Val Phe Ser Gln Ser Asp
 85 90 95
 Asp Pro Gln Met Cys Gly Ala Tyr Val Ser Asp Ile Tyr Glu Tyr Leu
 100 105 110
 His Lys Met Glu Met Glu Thr Lys Arg Arg Pro Leu Pro Asp Tyr Leu
 115 120 125
 Asp Lys Val Gln Lys Asp Val Thr Ala Asn Met Arg Gly Val Leu Ile
 130 135 140
 Asp Trp Leu Val Glu Val Ala Glu Glu Tyr Lys Leu Leu Pro Asp Thr
 145 150 155 160
 Leu Tyr Leu Thr Val Ser Tyr Ile Asp Arg Phe Leu Ser Met Asn Ala
 165 170 175
 Leu Ser Arg Gln Lys Leu Gln Leu Leu Gly Val Ser Ser Met Leu Ile
 180 185 190
 Ala Ser Lys Tyr Glu Glu Ile Ser Pro Pro His Val Glu Asp Phe Cys
 195 200 205
 Tyr Ile Thr Asp Asn Thr Tyr Lys Lys Glu Glu Val Val Lys Met Glu
 210 215 220
 Ala Asp Val Leu Lys Phe Leu Lys Phe Glu Met Gly Asn Pro Thr Ile
 225 230 235 240
 Lys Thr Phe Leu Arg Arg Leu Thr Arg Val Val Gln Asp Gly Asp Lys
 245 250 255
 Asn Pro Asn Leu Gln Phe Glu Phe Leu Gly Tyr Tyr Leu Ala Glu Leu
 260 265 270
 Ser Leu Leu Asp Tyr Gly Cys Val Lys Phe Leu Pro Ser Leu Ile Ala
 275 280 285

Ser Ser Val Ile Phe Leu Ser Arg Phe Thr Leu Gln Pro Lys Val His
 290 295 300
 Pro Trp Asn Ser Leu Leu Gln His Asn Ser Gly Tyr Lys Pro Ala Asp
 305 310 315 320
 Leu Lys Glu Cys Val Leu Ile Ile His Asp Leu Gln Leu Ser Lys Arg
 325 330 335
 Gly Ser Ser Leu Val Ala Val Arg Asp Lys Tyr Lys Gln His Lys Phe
 340 345 350
 Lys Cys Val Ser Thr Leu Thr Ala Pro Pro Ser Ile Pro Asp Glu Phe
 355 360 365
 Phe Glu Asp Ile
 370

<210> 30
 <211> 335
 <212> PRT
 <213> Arabidopsis thaliana

<400> 30
 Met Arg Ser Tyr Arg Phe Ser Asp Tyr Leu His Met Ser Val Ser Phe
 1 5 10 15
 Ser Asn Asp Met Asp Leu Phe Cys Gly Glu Asp Ser Gly Val Phe Ser
 20 25 30
 Gly Glu Ser Thr Val Asp Phe Ser Ser Ser Glu Val Asp Ser Trp Pro
 35 40 45
 Gly Asp Ser Ile Ala Cys Phe Ile Glu Asp Glu Arg His Phe Val Pro
 50 55 60
 Gly His Asp Tyr Leu Ser Arg Phe Gln Thr Arg Ser Leu Asp Ala Ser
 65 70 75 80
 Ala Arg Glu Asp Ser Val Ala Trp Ile Leu Lys Val Gln Ala Tyr Tyr
 85 90 95
 Asn Phe Gln Pro Leu Thr Ala Tyr Leu Ala Val Asn Tyr Met Asp Arg
 100 105 110
 Phe Leu Tyr Ala Arg Arg Leu Pro Glu Thr Ser Gly Trp Pro Met Gln
 115 120 125
 Leu Leu Ala Val Ala Cys Leu Ser Leu Ala Ala Lys Met Glu Glu Ile
 130 135 140
 Leu Val Pro Ser Leu Phe Asp Phe Gln Val Ala Gly Val Lys Tyr Leu
 145 150 155 160
 Phe Glu Ala Lys Thr Ile Lys Arg Met Glu Leu Leu Val Leu Ser Val
 165 170 175
 Leu Asp Trp Arg Leu Arg Ser Val Thr Pro Phe Asp Phe Ile Ser Phe
 180 185 190
 Phe Ala Tyr Lys Ile Asp Pro Ser Gly Thr Phe Leu Gly Phe Phe Ile
 195 200 205
 Ser His Ala Thr Glu Ile Ile Leu Ser Asn Ile Lys Glu Ala Ser Phe
 210 215 220

Leu Glu Tyr Trp Pro Ser Ser Ile Ala Ala Ala Ala Ile Leu Cys Val
 225 230 235 240
 Ala Asn Glu Leu Pro Ser Leu Ser Ser Val Val Asn Pro His Glu Ser
 245 250 255
 Pro Glu Thr Trp Cys Asp Gly Leu Ser Lys Glu Lys Ile Val Arg Cys
 260 265 270
 Tyr Arg Leu Met Lys Ala Met Ala Ile Glu Asn Asn Arg Leu Asn Thr
 275 280 285
 Pro Lys Val Ile Ala Lys Leu Arg Val Ser Val Arg Ala Ser Ser Thr
 290 295 300
 Leu Thr Arg Pro Ser Asp Glu Ser Ser Ser Pro Cys Lys Arg Arg Lys
 305 310 315 320
 Leu Ser Gly Tyr Ser Trp Val Gly Asp Glu Thr Ser Thr Ser Asn
 325 330 335

<210> 31
 <211> 354
 <212> PRT
 <213> Nicotiana tabacum

<400> 31
 Met Ala Ala Asp Asn Ile Tyr Asp Phe Val Ala Ser Asn Leu Leu Cys
 1 5 10 15
 Thr Glu Thr Lys Ser Leu Cys Phe Asp Asp Val Asp Ser Leu Thr Ile
 20 25 30
 Ser Gln Gln Asn Ile Glu Thr Lys Ser Lys Asp Leu Ser Phe Asn Asn
 35 40 45
 Gly Ile Arg Ser Glu Pro Leu Ile Asp Leu Pro Ser Leu Ser Glu Glu
 50 55 60
 Cys Leu Ser Phe Met Val Gln Arg Glu Met Glu Phe Leu Pro Lys Asp
 65 70 75 80
 Asp Tyr Val Glu Arg Leu Arg Ser Gly Asp Leu Asp Leu Ser Val Arg
 85 90 95
 Lys Glu Ala Leu Asp Trp Ile Leu Lys Ala His Met His Tyr Gly Phe
 100 105 110
 Gly Glu Leu Ser Phe Cys Leu Ser Ile Asn Tyr Leu Asp Arg Phe Leu
 115 120 125
 Ser Leu Tyr Glu Leu Pro Arg Ser Lys Thr Trp Thr Val Gln Leu Leu
 130 135 140
 Ala Val Ala Cys Leu Ser Leu Ala Ala Lys Met Glu Glu Ile Asn Val
 145 150 155 160
 Pro Leu Thr Val Asp Leu Gln Val Gly Asp Pro Lys Phe Val Phe Glu
 165 170 175
 Gly Lys Thr Ile Gln Arg Met Glu Leu Leu Val Leu Ser Thr Leu Lys
 180 185 190
 Trp Arg Met Gln Ala Tyr Thr Pro Tyr Thr Phe Ile Asp Tyr Phe Met
 195 200 205

Arg	Lys	Met	Asn	Gly	Asp	Gln	Ile	Pro	Ser	Arg	Pro	Leu	Ile	Ser	Gly
210						215					220				
Ser	Met	Gln	Leu	Ile	Leu	Ser	Ile	Ile	Arg	Ser	Ile	Asp	Phe	Leu	Glu
225					230					235					240
Phe	Arg	Ser	Ser	Glu	Ile	Ala	Ala	Ser	Val	Ala	Met	Ser	Val	Ser	Gly
				245					250					255	
Glu	Ile	Gln	Ala	Lys	Asp	Ile	Asp	Lys	Ala	Met	Pro	Cys	Phe	Phe	Ile
			260					265					270		
His	Leu	Asp	Lys	Gly	Arg	Val	Gln	Lys	Cys	Val	Glu	Leu	Ile	Gln	Asp
		275					280					285			
Leu	Thr	Thr	Ala	Thr	Ile	Thr	Thr	Ala	Ala	Ala	Ala	Ser	Leu	Val	Pro
	290					295					300				
Gln	Ser	Pro	Ile	Gly	Val	Leu	Glu	Ala	Ala	Ala	Cys	Leu	Ser	Tyr	Lys
305					310					315					320
Ser	Gly	Asp	Glu	Arg	Thr	Val	Gly	Ser	Cys	Thr	Thr	Ser	Ser	His	Thr
					325				330					335	
Lys	Arg	Arg	Lys	Leu	Asp	Thr	Ser	Ser	Leu	Glu	His	Gly	Thr	Ser	Glu
			340					345					350		

Lys Leu

<210> 32
 <211> 373
 <212> PRT
 <213> Nicotiana tabacum

<400> 32

Met	Ala	Ile	Glu	His	Asn	Glu	Gln	Gln	Glu	Leu	Ser	Gln	Ser	Phe	Leu
1				5					10					15	
Leu	Asp	Ala	Leu	Tyr	Cys	Glu	Glu	Glu	Glu	Glu	Lys	Trp	Gly	Asp	Leu
			20					25					30		
Val	Asp	Asp	Glu	Thr	Ile	Ile	Thr	Pro	Leu	Ser	Ser	Glu	Val	Thr	Thr
			35				40					45			
Thr	Thr	Thr	Thr	Thr	Thr	Lys	Pro	Asn	Ser	Leu	Leu	Pro	Leu	Leu	Leu
			50			55					60				
Leu	Glu	Gln	Asp	Leu	Phe	Trp	Glu	Asp	Glu	Glu	Leu	Leu	Ser	Leu	Phe
65					70					75					80
Ser	Lys	Glu	Lys	Glu	Thr	His	Cys	Trp	Phe	Asn	Ser	Phe	Gln	Asp	Asp
				85					90					95	
Ser	Leu	Leu	Cys	Ser	Ala	Arg	Val	Asp	Ser	Val	Glu	Trp	Ile	Leu	Lys
			100					105					110		
Val	Asn	Gly	Tyr	Tyr	Gly	Phe	Ser	Ala	Leu	Thr	Ala	Val	Leu	Ala	Ile
		115					120					125			
Asn	Tyr	Phe	Asp	Arg	Phe	Leu	Thr	Ser	Leu	His	Tyr	Gln	Lys	Asp	Lys
130						135					140				
Pro	Trp	Met	Ile	Gln	Leu	Ala	Ala	Val	Thr	Cys	Leu	Ser	Leu	Ala	Ala
145					150					155					160

Lys	Val	Glu	Glu	Thr	Gln	Val	Pro	Leu	Leu	Leu	Asp	Phe	Gln	Val	Glu	165	170	175	
Asp	Ala	Lys	Tyr	Val	Phe	Glu	Ala	Lys	Thr	Ile	Gln	Arg	Met	Glu	Leu	180	185	190	
Leu	Val	Leu	Ser	Ser	Leu	Lys	Trp	Arg	Met	Asn	Pro	Val	Thr	Pro	Leu	195	200	205	
Ser	Phe	Leu	Asp	His	Ile	Ile	Arg	Arg	Leu	Gly	Leu	Arg	Asn	Asn	Ile	210	215	220	
His	Trp	Glu	Phe	Leu	Arg	Arg	Cys	Glu	Asn	Leu	Leu	Leu	Ser	Ile	Met	225	230	235	240
Ala	Asp	Cys	Arg	Phe	Val	Arg	Tyr	Met	Pro	Ser	Val	Leu	Ala	Thr	Ala	245	250	255	
Ile	Met	Leu	His	Val	Ile	His	Gln	Val	Glu	Pro	Cys	Asn	Ser	Val	Asp	260	265	270	
Tyr	Gln	Asn	Gln	Leu	Leu	Gly	Val	Leu	Lys	Ile	Asn	Lys	Glu	Lys	Val	275	280	285	
Asn	Asn	Cys	Phe	Glu	Leu	Ile	Ser	Glu	Val	Cys	Ser	Lys	Pro	Ile	Ser	290	295	300	
His	Lys	Arg	Lys	Tyr	Glu	Asn	Pro	Ser	His	Ser	Pro	Ser	Gly	Val	Ile	305	310	315	320
Asp	Pro	Ile	Tyr	Ser	Ser	Glu	Ser	Ser	Asn	Asp	Ser	Trp	Asp	Leu	Glu	325	330	335	
Ser	Thr	Ser	Ser	Tyr	Phe	Pro	Val	Phe	Lys	Lys	Ser	Arg	Val	Gln	Glu	340	345	350	
Gln	Gln	Met	Lys	Leu	Ala	Ser	Ser	Ile	Ser	Arg	Val	Phe	Val	Glu	Ala	355	360	365	
Val	Gly	Ser	Pro	His												370			